



X-Plain™

Crohn's Disease

Reference Summary

Crohn's Disease is one of the 2 most common inflammatory bowel diseases or IBD. The other one is Ulcerative Colitis. Crohn's Disease and Ulcerative Colitis both cause inflammation in the intestines and have very similar symptoms and diagnostic approaches. Together, these 2 diseases affect about 1 million Americans at any one time.

Crohn's disease and ulcerative colitis are two different forms of IBD. There are some important differences between them. Crohn's disease can affect any part of the gastrointestinal system from the mouth to the anus, whereas ulcerative colitis only affects the colon. In Crohn's disease the inflammation involves the full thickness of the bowels, whereas in ulcerative colitis only the inside layer of the bowels is usually affected. Both predispose to cancer but ulcerative colitis to a greater extent.

This reference summary will help you understand Crohn's Disease and how it can be treated.

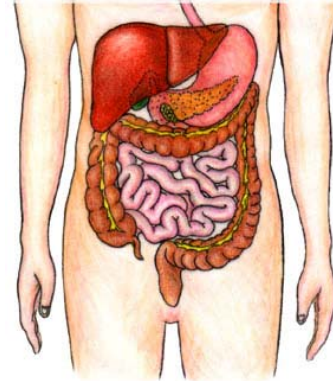
Anatomy

Swallowed food goes through the "esophagus" which is the feeding tube.

Next, food passes through the stomach, where it is partially digested. Digested food goes from the stomach to the small intestines, where most nutrients are further digested and absorbed into the body.

Fibers and digested food finally reach the colon. In the colon, the rest of the nutrients get absorbed and stools are formed.

Stools are stored in the last part of the colon, the sigmoid colon and rectum, before being excreted.



The colon has several sections:

- the ascending colon
- the transverse colon
- the descending colon
- the sigmoid colon
- the rectum
- the anus

The walls of the intestines have 3 layers. The inside layer is called mucosa; it is responsible for digesting and absorbing food.

The middle layer is muscle that helps push food through the intestines.

The outer layer of the intestines is called serosa. The serosa is very smooth, so the intestines do not get

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stuck together in the abdominal cavity.

Crohn's Disease

Inflammation caused by Crohn's Disease can affect the whole gastrointestinal tract, whereas ulcerative colitis only affects the colon. Crohn's Disease can cause any part of the gastrointestinal tract, from the mouth to the anus, to become inflamed. It usually only affects the colon and the last part of the small intestine, called the ileum.

Inflammation caused by Crohn's Disease can involve all 3 layers of the intestines and causes

- intestinal swelling
- intestinal scarring
- obstruction of the intestines

Crohn's Disease can also cause sores that tunnel through the affected area into surrounding tissues such as the bladder, vagina, or skin. These tunnels, called fistulae, often become infected.

Usually fistulae are treated with medicine, but in some cases, surgery is required. The areas around the anus and rectum are often involved. Crohn's Disease usually causes nutritional problems, such as a lack of protein, calories, or vitamins.

There are 3 main reasons that patients with Crohn's Disease have nutritional problems, or deficiencies.

- The patient may not eat enough of certain kinds of foods.
- Diarrhea causes a loss of protein.
- The patient's body may not absorb nutrients very well.

Other problems associated with Crohn's Disease include:

- arthritis
- skin problems such as rashes and sores
- inflammation in the eyes or mouth
- kidney stones
- gallstones
- liver diseases

Causes & Symptoms

There are no known causes of Crohn's Disease. Scientists believe that the immune system of the body responds to a virus or bacteria, causing the intestinal walls to become inflamed.

The immune system is made of blood cells and chemicals that find bacteria and viruses and destroy them. When the immune system tries to fight bacteria in the intestines, the intestines can become inflamed, swollen, destroyed, or scarred.

Crohn's Disease may be hereditary. Around 20% of Crohn's Disease patients have a blood relative with an inflammatory bowel disease.

Men and women are affected equally. Crohn's Disease affects small children, too. The most common symptoms of Crohn's Disease are pain in the lower right abdomen and diarrhea. Patients with Crohn's Disease may also suffer from rectal bleeding, weight loss, and fever. If bleeding is serious and persistent, it can lead to anemia, which is an abnormally low number of red blood cells. Children with Crohn's Disease may have impaired growth and development.

Fistula is an abnormal connection between two organs, or between an organ and the outside. For example a fistula can be a connection between the colon and the bladder, or the bladder and the vagina, or the colon and the outside. If fistulae develop, gas and stools may seep from

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them. If a fistula is between the intestines and the skin, the patient may experience gas or stool leaking from pores in the skin. In women, fistulae may develop connecting the intestines to the vagina; in this case, gas or stools may seep from the vagina. For men AND women with fistulae connecting the intestines to the bladder, gas or liquid stools may come out the urethra during urination.

Crohn's Disease can cause intestinal infections, causing bacteria and pus pockets to grow in the abdomen. Intestinal infections may result in severe pain, fever, and even death if not treated. In some cases, Crohn's Disease results in blockage of the intestines. This blockage can lead to death if not attended to urgently. The most common signs of such a blockage are abdominal pain, distention, nausea and vomiting.

Crohn's Disease increases the risk of developing colon cancer. For that reason, it is important to have regular medical check ups. If found early, colon cancer CAN be cured.

Diagnosis

A detailed physical examination as well as specialized tests may be required to diagnose Crohn's Disease. Blood tests check for anemia, which could indicate intestinal bleeding. Blood tests may also show a high white blood cell count, which is a sign of inflammation. A stool sample test will let the doctor know if there is bleeding or infection in the intestines.

To look at the small intestine, the doctor may do a test called an upper gastrointestinal series, or upper GI series. The patient drinks barium, a chalky liquid that coats the inside of the small intestine, then x-rays are taken. Barium shows up white on x-ray film, making any abnormalities stand out. To see the inside of the large intestine, the doctor may do a colonoscopy. A long, flexible, lighted tube called an endoscope is inserted into the anus. The endoscope is hooked to a camera that shows any inflammation or bleeding.

During a colonoscopy, the doctor may do a biopsy. A biopsy is a sample of tissue is taken from the lining of the intestine, to look at under a microscope. If tests show Crohn's Disease, more x-rays of the upper and lower digestive tract may be necessary to see what areas the disease affects.

Treatment Options

Treatment for Crohn's Disease aims at

- controlling inflammation
- correcting nutritional deficiencies
- relieving symptoms



Treatment may include medication, nutrition supplements, surgery, or a combination of any of these. Treatment can help control Crohn's Disease, but unfortunately there is no cure. Some Crohn's Disease patients do NOT have symptoms for months or years. However, symptoms usually come back several times throughout life. Since the disease comes and goes randomly, it is hard to tell if a treatment has helped.

Patients with Crohn's Disease may need medical care for a long time, with regular doctor visits to monitor their condition.

Inflammation due to Crohn's Disease may be controlled with medication. Anti-inflammatory drugs can cause side effects such as

- nausea

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- vomiting
- heartburn
- diarrhea
- headache

Drugs that hold back the immune system are also used to treat Crohn's Disease. These medications work by blocking the immune reaction that leads to inflammation. These include the following medications: 6-mercaptopurine and azathioprine. Antibiotics may be used to treat bacteria growing in the small intestines. TNF, or Tumor Necrosis Factor, is a specific chemical in the body that may cause inflammation associated with Crohn's disease. A new generation of medications act against TNF is now available for the treatment of resistant Crohn's disease. They include infliximab or Remicade®.

Diarrhea and abdominal pain are usually relieved when inflammation goes down, but more medication may be necessary. Medications to reduce diarrhea are sometimes used. Patients who are dehydrated due to diarrhea are treated with fluids and electrolytes.

Surgery to remove part of the intestine can help Crohn's Disease but cannot cure it. The inflammation tends to return next to the area of intestine that has been removed. Many Crohn's Disease patients need surgery, either to relieve symptoms or to correct complications such as blockage, perforation, fistulae, abscesses, or bleeding in the intestine.

Some people who have Crohn's Disease in the large intestine need to have their entire colon removed in an operation called colostomy. A colostomy, which reroutes the intestines to an opening in the abdomen, may also need to be performed at that time.



The doctor may recommend nutritional supplements, especially for children who have not grown to full potential. Special high-calorie liquid drinks are sometimes used. Rarely, patients with Crohn's Disease need to be fed intravenously, through an IV, for a while. This provides extra nutrition and a rest for the intestines.

Nutrition

No special diet has been proven effective for preventing or treating Crohn's Disease.

Some people find their symptoms are made worse by

- milk
- alcohol
- hot spices
- fiber

People who have Crohn's Disease should follow a nutritious diet and avoid any foods that seem to worsen symptoms. It is best to ask a doctor before taking vitamin supplements.

Pregnancy

Crohn's Disease does not usually affect pregnancy. Even so, women who have Crohn's Disease should talk to their doctor before getting pregnant.

Most children born to women who have Crohn's Disease are unaffected by the disease.

Summary

People with Crohn's Disease may feel well and have no symptoms for long periods of time when the disease is not active.

There are various treatment options for people with Crohn's Disease, which are usually successful at reducing symptoms when the disease is active. People who have Crohn's Disease may need to take medication or occasionally be hospitalized. Even so, they are usually still able to hold jobs, raise families, and function successfully at home and in society!

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